limbs absent elbow extension was reconstructed by transferring either the deltoid to the triceps muscle or the biceps to the triceps muscle.

Our review has suggested the need to individualize reconstructive planning and to develop a standardized method to evaluate the benefits or deficits that result from upper limb reconstructive procedures. Surgical results are enhanced when specialists in spinal cord and rehabilitation medicine, as well as occupational and physical therapists, are involved in patient selection, the choice of surgical procedures, and aftercare and follow-up. The development and continued nurturing of a harmonious relationship with the specialists who are intimately involved in the total care of quadriplegic patients are vital.

VINCENT R. HENTZ, MD
Palo Alto, California

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Sexuality Following Stroke

SEVERAL RECENT STUDIES have reported significant reductions in sexual activity in both younger and older patients following a stroke. A pronounced reduction in libido has been found in both men and women, with a corresponding decrease in coital frequency. The pattern of sexual activity shows a major abrupt change following a stroke. Male patients reported that before a stroke, 95% had erections, 73% had normal ejaculation, and none thought that they had a sexual problem. A year after a stroke, however, only 38% reported normal erections, 22% ejaculated, and 58% thought that they had a sexual problem. Before a stroke, 43% of women reported normal orgasms and 7% felt that they had a sexual problem. At one year after a stroke, only 11% reported having orgasms and 48% felt that they had a sexual problem.

Sexual dysfunction following a stroke may have a number of causes. Impotence may be due to peripheral vascular disease, diabetic neuropathy, or the use of hypotensive medication or tranquilizers. Urologic studies, however, have shown that as much as 90% of all erectile dysfunction is psychogenic, and it is unlikely that these organic factors would be responsible for an abrupt change after a stroke. Further, sexual dysfunction is not due to the direct neurologic features of focal brain lesions, although there have been some case reports of intractable hypersexuality developing following temporal lobe lesions.

For many patients the important factors contributing to sexual dysfunction following stroke are based on behavioral changes. Physical disability and a sense of a loss of attractiveness lead to reduced self-esteem. Patients fear the rejection, or even abandonment, of their partner and are often reluctant to make emotional demands. They usually have some degree of reactive depression. Some patients report a fear that the physical stress of sexual activity may cause another stroke, such as through a rise in the blood pressure. The nature of a couple's relationship may change, with greater focus and attention being given to the details of physical care—transfers, bathing, and personal hygiene. Patients have the concern that these needs be met, and a caring, committed partner gains personal fulfillment through satisfying those physical needs. Involvement in these busy and time-consuming physical activities may be a partial sexual substitute, but they do not satisfy all of the needs of a couple for emotional expression and intimacy.

Physicians can be effective in helping patients and their spouses adjust to all of the consequences of disability from stroke, including sexual dysfunction. Physicians should understand sexuality and life-styles in the aged and learn how to relate empathically to disabled elderly persons. Intimacy may be expressed in different forms, especially in the elderly, but the need for friendship, sharing, and love continues. Physicians should be attentive to these important human needs and be prepared to initiate intervention early in rehabilitation to optimize the total adjustment process following a stroke.

MURRAY E. BRANDSTATER, MBBS, PhD, FRCP(C)
Loma Linda, California

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Ultralight Wheelchairs

WHEELCHAIRS ARE USED FOR MOBILITY, and users may spend hours every day in their chairs. The older wheelchairs are heavy (20 kg [45 lb]), cumbersome to maneuver, and aesthetically unappealing.

The demands by wheelchair athletes for lightweight, higher performance wheelchairs have produced dramatic changes in the manual wheelchair market. In 1979 a California manufacturer introduced the "sports chair." Today's sports chair weighs only 5 to 7 kg (12 to 15 lb) and is custom-made for competition and sports. Ultralight wheelchairs have advantages for all mobility-impaired patients: they are easier to maneuver, require less energy to do so, and are easier to transport.

Most manufacturers of lightweight wheelchairs now produce adjustable, multi-option street chairs that weigh 10 to 14 kg (23 to 30 lb). The wheelchair frames are made from aluminum alloy, stainless steel, or both, with the basic models having rigid or folding frames. A rigid chair provides better performance and durability, but the folding chair becomes compact for transport.

Some typical options for lightweight wheelchairs include adjustable back height; adjustable axle positions, which increases stability; anti-tip devices; removable and adjustable-height armrests; and various frame and upholstery color choices. The built-in adjustability allows a person to set an optimal seat position to further maximize efficient propulsion.

The ultralight wheelchairs have a rapid wheel response and are easier to propel. These characteristics are important